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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/699,854

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Sung-Su Jung

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EXAMINER

LIN, JAMES

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

04/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,854	Applicant(s) JUNG ET AL.	
	Examiner Jimmy Lin	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/16/2008 has been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 10-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (hereafter, AAPA) in view of Onuma (JP 05-345160).

AAPA teaches that an aligning substrate can be used to adjust the gap between the substrate and a plurality of syringes when making a LCD. The height of the aligning substrate is the same as that of the substrate. The aligning substrate is loaded onto a table, and the syringes are lowered so that the nozzles just come into contact with the surface of the aligning substrate. The nozzles are raised to a predetermined height above the surface of the aligning substrate to thereby obtain a desired gap between the aligning substrate and the syringes. Then the aligning substrate is unloaded, a LCD substrate is loaded on the table, and a seal pattern is formed on the LCD substrate [0016]. The table can be moved in the left/right and forward/backward directions [0013].

AAPA does not explicitly teach that the aligning substrate can be attached to a side surface of the table and that the table can be moved to position the syringe over the substrate from the aligning substrate to dispense the sealant. However, Onuma teaches a method of forming a desired gap prior to forming a sealant layer on a LCD substrate. An aligning substrate 6 is used to acquire the desired gap. The nozzle can contact the aligning substrate while the LCD substrate is loaded on the table. Onuma reasonably teaches the use of a fixed aligning substrate

that is not required to be loaded/unloaded on the table. It would have been obvious to one of ordinary skill in the art at the time of invention to have provided a fixed aligning substrate in the method of AAPA with a reasonable expectation of success because Onuma teaches that such a method of aligning is operable in the LCD deposition art.

Onuma displays in Fig. 4 that the aligning substrate 6 is positioned close to a table on which the substrate 2 is placed, but does not explicitly teach that the aligning substrate is attached to a side surface of the table. However, the nozzle contacts the aligning substrate while the LCD substrate has been loaded onto the table, so the table must be moved so that the position of the nozzle can be moved from the aligning substrate to the LCD substrate. The distance that the table must move can be reduced as the aligning substrate is positioned closer to the table, thereby increasing productivity. Attaching the aligning substrate to the table would allow for the smallest distance between the nozzle and the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have attached the aligning substrate to the table in the method of Onuma with a reasonable expectation of success. One would have been motivated to do so in order to have increased productivity.

Claims 14-15: AAPA teaches that an image camera can be used to detect the alignment patterns on the aligning substrate and that the position of the syringes are aligned according to the image [0016].

Claim 16: AAPA does not explicitly teach cleaning the aligning substrate after the syringes are raised to have a desired gap between the aligning substrate and the nozzles. However, cleaning the aligning substrate would have extended the life and use of the aligning substrate. Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to have cleaned the aligning substrate. One would have been motivated to do so in order to have extended the lifetime of the aligning substrate and to have reduced production costs.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Onuma '160 as applied to claim 10 above, in view of Hashimoto et al. (U.S. Publication No. 2001/0013920).

AAPA and Onuma are discussed above, but do not explicitly teach that the dispensing includes dispensing of a liquid crystal. However, Hashimoto teaches that dispensing liquid crystal from a syringe is well known in the art [0050]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have dispensed liquid crystals from the syringe of AAPA with a reasonable expectation of success because Hashimoto teaches that syringes are operable for dispensing such materials onto an LCD substrate.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Onuma '160 as applied to claim 10 above, in view of Hashimoto et al. (U.S. Publication No. 2003/0083203).

AAPA and Onuma are discussed above, but do not explicitly teach that silver is dispensed from the syringe. However, Hashimoto '203 teaches that conductive fine particles, such as silver, can be dropped onto an LCD substrate from a nozzle [0102]-[0104]. The silver is dropped on the outer edges of the image display to prevent breaks and short circuits ([0191]-[0195]; Fig. 8). AAPA teaches that materials can be deposited onto an LCD substrate by dropping the materials through the nozzle of a syringe. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have connected the upper and lower substrates of AAPA using the silver dots of Hashimoto '203 in order to have prevented breaks and short circuits. Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention to have dropped the silver dots onto the LCD substrate using the syringe of AAPA because AAPA teaches that such syringes have nozzles that are operable for dropping material onto an LCD substrate. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined

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application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 10-11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 19 and 23 of copending Application No. 10/824585 in view of Hashimoto '920 and AAPA. Claim 19 of '585 is directed to forming a seal pattern with a syringe and claim 23 of '585 is directed to contacting an alignment plate attached to a table in order to form a desired gap between the nozzle and alignment plate. Claim 10 of the present application is merely a combination of claims 19 and 23 of '585, except that it does not limit the deposition of the sealant onto an LCD substrate or the height of the aligning substrate to be the same as that of the substrate.

Hashimoto '920 teaches that it was well known to use a dispenser method to form a sealant onto an LCD substrate (abstract; [0046]). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the claimed method of '585 to form a sealant on an LCD substrate because Hashimoto '920 teaches that using a dispenser (i.e., a syringe) to form a sealant layer is operable for forming an LCD substrate.

AAPA teaches that it was well known to set the height of the aligning substrate to be the same as that of the substrate. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have set the height of the aligning substrate to be the same as that of the substrate in the claimed method of '585.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

8. Applicant's arguments, see pg. 6-7, filed 12/18/2007, with respect to the rejection(s) of claim(s) 10-11 over Onuma '160 have been fully considered and are persuasive. The rejection of the claims has been withdrawn.

9. Applicant's arguments filed 12/18/2007 have been fully considered but they are not persuasive.

Applicant argues on pg. 8 that Onuma does not teach or suggest "wherein the height of the aligning substrate is the same as that of the substrate so that the syringe is raised at the set height from the surface of the aligning substrate". However, Onuma is only used to teach that the use of a fixed aligning substrate, as opposed to one that is required to be loaded/unloaded from a table, was known in the art. AAPA would have suggested that the height of the aligning substrate is the same as that of the substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is (571)272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Jimmy Lin/

Examiner, Art Unit 1792

/Timothy H Meeks/

Supervisory Patent Examiner, Art Unit 1792